

CLAIMS

- 1) A method to hinder the progress of avalanches that fall with high velocity and contain an enormous amount of energy, particularly those heading towards inhabited districts, constructions and other things, that need to be protected, where the method is *characterized by* catching the avalanche in a special protection system (1), which mainly consists of a net sack (9) fastened by main strings (3, 11) to the ground, and an oblong storage box (16) consisting of a storage platform (5), that stands on poles (4), and a protection helmet (17), where the net sack (9) is ready and waiting inside the storage box (16), whereas the protection system (1) is planted on a mountain slope, in a canyon, at the foot of a mountain or at other places where the risk of falling avalanches exists, in such a way that one of the long side of the storage box (16) faces the direction from which the avalanche falls and the air mass, that the avalanche thrusts ahead of itself as it falls, flings the protection helmet (17) backwards away from the platform (5), and where by the net sack (9) opens because of the wing units (7) and the net sack then flings out of the storage box, where the wings (5, 8) helps to keep net sack open because of the effect from the air stream, the form of the wings and their placement below and sideways of the opening of the net sack.
- 2) A method according to claim 1, *characterized by* that the unit (5) being both a storage platform for the net sack (9) along with the attached accessories, to which the poles (4) are fastened, and some kind of a wing in a upside-down position, falls down on to the main strings (11) because of the hinges (6) of the poles (4) when the avalanche smashes on to the unit, where the main strings (11) are fastened to the footrope (10) of the opening of the net sack (9), and thereby holds the unit the net sack down and directs the avalanche into the sack, where at the same time the wing units (7), which have the right wing position and are fastened to the top rope (13) of the upper border of the opening of the net sack, pulls up the sack's opening because of the air stream, whilst the unit (8), which are flat plates fastened, with their thin side up, on the main strings (3), which are fastened at the one end to each of the lateral sides of the

net sack and to the anchors (2) on the other end, secures the opening of the net sack (9) in the lateral direction.

- 5 3) A method according to claim 1, *characterized by* that at each riskzone for avalanches the size and the number of protection system units (1) are variable, depending on the situation, and multiple protective units in overlapping rows to form a continuous protective wall against a potential avalanche can be build up.
- 10 4) A protection system to hinder avalanches that fall with high velocity and contain an enormous amount of energy, particularly those heading towards inhabited districts, constructions and other things, that need to be protected, according to the method disclosed in claims 1 – 3, *characterized by* the protection
- 15 device (1) consisting mainly of a semi-circular net sack (9) with mesh and an opening; a top rope (13); a foot rope (10); leading strings (12, 14, 15) and wing units (7) attached to the top rope (13) and the net sack (9); main strings (3, 11) which are fastened to ground anchors (2) at one end and at the other end to leading strings (12), foot rope (10) and the top rope (13) of the net sack (9); flat
- 20 plates (8) that are attached to the main strings (3); storage platform (5) standing on poles (4) which are equipped with locking hinges (6); and a protective helmet (17).
- 25 5) A protection system according to claim 4, *characterized by* that the net sack (9) is knotted or sawed of plastic straps or woven of plastic material that forms net mesh with 30-90% density, and the opening of the net sack (9) is quadrilateral and almost box-like in an extended position, with a top rope (13), which forms the upper border of the opening and to which the wing units (7) are fastened; the footrope (10), which forms the lower border of the opening and to
- 30 which the main strings (11) are fastened; and leading strings (12) that forms the side borders of the opening.

- 5 6) A protection system according to claim 4 – 5, *characterized by* an oblong storage box (16) consisting of a storage platform (5), which forms the floor of the storage box and stands on at least six poles or feet (4), that have inclined sidebars, whereas the shape of the cross-section of the platform is like an upside-down airplane wing; and further consists of an oblong and box-shaped protection helmet (17) that collapses on top of the platform and closes the box that contains the net sack (9); the wing units (7), flat plates (8), and the main strings (3, 11), which are placed on top of the storage platform (5).
- 10 7) A protection system according to claim 4 – 6, *characterized by* that each pole (4) is equipped with at least two hinges (6) which have lock-bolts that snap apart under action of a force from the avalanche hits the storage box (16), and length of the poles (4) is variable.
- 15 8) A protection system according to claim 4 – 6, *characterized by* the ground fasteners of the protection apparatus (1) are earth anchors (2), which are steel bars that are drilled and fastened by concrete down into the ground forming a semi-circle according to the direction of the force action of the main strings (3, 11), and where each steel bar has an arm that join together to form one fastening point where to the main strings (3, 11) are connected to and there are 1 to 12
- 20 steel bars for each fastening point.